AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

Claim 1 (currently amended): A hot melt conductor paste composition comprising from about 50% to about 90% by weight of conductive particles consisting essentially of either silver or aluminum and up to about 50% by weight of glass particles dispersed in a thermoplastic polymer system, wherein the paste composition ~~that~~ is a solid at 25°C and melts at a temperature within the range of from about 35°C to about 90°C.

Claim 2 (original): The hot melt conductor paste composition according to claim 1 further comprising at least 0.01% by weight of one or more C_{12} or higher saturated fatty acids.

Claim 3 (original): The hot melt conductor paste composition according to claim 1 wherein said glass particles comprise at least one glass frit comprising by weight from about 60% to about 95% PbO, up to about 30% SiO_2, up to about 15% B_2O_3, up to about 10% Al_2O_3, up to about 10% ZrO_2, up to about 5% P_2O_5, and up to about 5% RuO_2.

Claim 4 (original): The hot melt conductor paste composition according to claim 1 wherein said conductive particles have a bi-modal particle size distribution.

Claim 5 (original): The hot melt conductor paste composition according to claim 1 wherein a majority portion of said conductive particles comprise flakes having a D_{50} of less than about 5.0 μm.

Claim 6 (original): The hot melt conductor paste composition according to claim 3 wherein said glass frit comprises by weight from about 75% to about 92% PbO, from

about 10% to about 20% SiO_2, up to about 7% B_2O_3, up to about 5% Al_2O_3, up to about 6% ZrO_2, up to about 3% P_2O_5, and up to about 3% RuO_2.

Claim 7 (original): The hot melt conductor paste composition according to claim 1 wherein said thermoplastic polymer system comprises at least one C_{14} or higher linear primary alcohol.

Claim 8 (original): The hot melt conductor paste composition according to claim 7 wherein said thermoplastic polymer system comprises a blend of two or more different C_{14} to C_{20} linear primary alcohols.

Claim 9 (original): The hot melt conductor paste composition according to claim 7 wherein said thermoplastic polymer system further comprises one or more cellulose ethers.

Claim 10 (original): The hot melt conductor paste composition according to claim 9 wherein said cellulose ether comprises ethyl cellulose.

Claim 11 (original): The hot melt conductor paste composition according to claim 2 wherein said C_{12} or higher saturated fatty acid comprises isostearic acid.

Claim 12 (original): The hot melt conductor paste composition according to claim 1 wherein said conductive particles comprise a blend of a majority portion by weight of silver flakes having a D_{50} of less than 2.5 μm and a minority portion by weight of flakes having a D_{50} of greater than about 2.5 μm, wherein said glass particles comprise a glass frit comprising by weight from about 75% to about 92% PbO, from about 10% to about 20% SiO_2, up to about 7% B_2O_3, up to about 5% Al_2O_3, up to about 6% ZrO_2, up to about 3% P_2O_5, and up to about 3% RuO_2, and wherein said thermoplastic polymer system comprises a blend of two or more different C_{16} to C_{18} linear primary alcohols and ethyl cellulose.

Claim 13 (original): The hot melt conductor paste composition according to claim 12 further comprising at least about 0.1% by weight of one or more C_{12} or higher saturated fatty acids.

Claim 14 (original): The hot melt conductor paste composition according to claim 1 wherein said conductive particles comprise aluminum flakes having a D_{50} of less than about 5.5 μm, wherein said glass particles comprise silica, and wherein said thermoplastic polymer system comprises a blend of at least one C_{16} or higher linear primary alcohol and ethyl cellulose.

Claim 15 (original): The hot melt conductor paste composition according to claim 14 further comprising at least about 0.1% by weight of one or more C_{12} or higher saturated fatty acids.

Claim 16 (currently amended): A method of forming a conductive pattern on a photovoltaic cell comprising:

providing a hot melt conductor paste composition comprising from about 50% to about 90% by weight of conductive particles consisting essentially of either silver or aluminum and up to about 50% by weight of glass particles dispersed in a thermoplastic polymer system, wherein the paste composition ~~that~~ is a solid at 25°C and melts at a temperature within the range of from about 35°C to about 90°C;

heating said hot melt conductor paste composition to a temperature above the melting point of the thermoplastic polymer system but below the temperature at which said thermoplastic polymer system begins to substantially volatilize;

applying said hot melt conductor paste composition to a silicon substrate by screen printing, pad printing, extrusion, or dispensing; and

firing said substrate to completely burn out all organic material is said hot melt conductor paste composition and form said conductive pattern.

Claim 17 (original): The method according to claim 16 wherein said hot melt conductor paste is applied by screen printing to said substrate using a screen having a mesh size within the range of from 100 mesh to about 400 mesh.

Claim 18 (original): The method according to claim 16 wherein said firing temperature is within the range of from about 650°C to about 900°C.

Claim 19 (original): The method according to claim 16 wherein said conductive particles comprise a blend of a majority portion by weight of silver flakes having a D_{50} of less than 2.5 μm and a minority portion by weight of flakes having a D_{50} of greater than about 2.5 μm, wherein said glass particles comprise a glass frit comprising by weight from about 75% to about 92% PbO, from about 10% to about 20% SiO_2, up to about 7% B_2O_3, up to about 5% Al_2O_3, up to about 6% ZrO_2, up to about 3% P_2O_5, and up to about 3% RuO_2, and wherein said thermoplastic polymer system comprises a blend of two or more different C_{16} to C_{18} linear primary alcohols and ethyl cellulose, and wherein said composition further comprises at least about 0.01% by weight of one or more C_{12} or higher saturated fatty acids.

Claim 20 (original): The method according to claim 16 wherein said conductive particles comprise aluminum flakes having a D_{50} of less than about 5.5 μm, wherein said glass particles comprise silica, and wherein said thermoplastic polymer system comprises a blend of at least one C_{16} or higher linear primary alcohol and ethyl cellulose, and wherein said composition further comprises at least about 0.01% by weight of one or more C_{12} or higher saturated fatty acids.

Claim 21 (new): A method of forming a conductive pattern on a photovoltaic cell comprising:

providing a hot melt conductor paste composition comprising from about 50% to about 90% by weight of conductive particles consisting essentially of either silver or aluminum and up to about 50% by weight of glass particles dispersed in a thermoplastic

polymer system, wherein the hot melt conductor paste composition is a solid at 25°C and melts at a temperature within the range of from about 35°C to about 90°C;

heating the hot melt conductor paste composition to a temperature above the melting point of the thermoplastic polymer system but below the temperature at which the thermoplastic polymer system begins to substantially volatilize;

applying the hot melt conductor paste composition to a silicon substrate by screen printing, pad printing, extrusion, or dispensing;

allowing the hot melt conductor paste composition to cool to a temperature below the melting point of the thermoplastic polymer system such that it solidifies on the silicon substrate;

applying an additional electronic paste material onto the solidified hot melt conductor paste composition; and

firing the silicon substrate to completely burn out all organic material is the hot melt conductor paste composition and form the conductive pattern.